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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,002	11/26/2003	Tianbing Brian Teng	7293-056	9568

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EXAMINER

CRUZ, MAGDA

ART UNIT PAPER NUMBER

2851

DATE MAILED: 04/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/723,002

Applicant(s)

TENG ET AL.

Examiner

Magda Cruz

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2003.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-34 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. In addition to Replacement Sheets containing the corrected drawing figure(s), applicant is required to submit a marked-up copy of each Replacement Sheet including annotations indicating the changes made to the previous version. The marked-up copy must be clearly labeled as "Annotated Sheets" and must be presented in the amendment or remarks section that explains the change(s) to the drawings. See 37 CFR 1.121(d)(1). Failure to timely submit the proposed drawing and marked-up copy will result in the abandonment of the application.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 2851

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Chen et al.

Chen et al. (US Patent Number 6,367,933 B1) discloses:

- Regarding claim 1, a method comprising: selecting a plurality of corners (Figure 9B, elements C0, C1, C2 and C3) within an image projected on a projection surface (Figure 9B, element Image_1); and predistorting the image responsive to the selecting where the predistorted image exhibits no distortion when projected on the projection surface (column 2, lines 40-47).
- Regarding claims 2, 15 and 27, a method and an apparatus for aligning a center of the image with a center of the projection surface (column 7, lines 10-17).
- Regarding claim 3, a method where the distorting is responsive to the aligning (column 7, lines 58-61).
- Regarding claim 4, a method where the aligning is before the selecting (i.e. keystone distortion that would result from projecting an image; column 7, lines 50-56).
- Regarding claim 5 and 17, a method and apparatus comprising fixing a center of the predistorted image coincident with the center of the projection surface (column 16, lines 32-42).

- Regarding claims 6 and 18, a method and an apparatus where the selecting comprises selecting two corners of the image (column 18, lines 38-40).
- Regarding claims 7 and 19, a method and an apparatus where the selecting comprises selecting four corners of the image (column 18, lines 9-15).
- Regarding claim 8, a method where the selecting comprises using an on screen display means to do the selecting (column 7, lines 61-65).
- Regarding claim 9, a method where the predistorting the image comprises scaling the image (column 13, lines 46-47).
- Regarding claims 10 and 22, a method and an apparatus where the scaling comprises vertically (i.e. Y coordinate) scaling the image (column 13, lines 47-51).
- Regarding claims 11 and 23, a method and an apparatus where the vertically scaling comprises calculating vertical scalar ($R_x(y)$) registers (column 20, lines 47-50).
- Regarding claims 12 and 24, a method and an apparatus where the scaling comprises horizontally (i.e. X coordinate) scaling the image (column 13, lines 47-51).
- Regarding claims 13 and 25, a method and an apparatus where the horizontally scaling comprises calculating horizontal scalar ($R_x(Y)$) registers (column 13, lines 47-51).

- Regarding claim 14, an apparatus, comprising: means for selecting a plurality of corners within an image projected on a projection surface (column 18, lines 9-15); and means for distorting the image responsive to the plurality of corners (column 7, lines 56-61).
- Regarding claim 16, the means for distorting is responsive to the center of the image (column 8, lines 22-40).
- Regarding claim 20, means for selecting comprises a means for on screen display to interact with a user to select the plurality of corners (column 17, lines 3-9).
- Regarding claim 21, means for distorting the image comprises means for scaling the image (column 13, lines 66 through column 14, line 9).
- Regarding claim 26, an apparatus (Figure 2, element 200), comprising: an interface (Figure 2, element 204) to identify a plurality of corners of an image (i.e. referring back to Figure 9B, Image_1) projected on a surface (column 9, lines 39-41); a controller (Figure 2, element 208) to distort the image responsive to the plurality of corners (column 9, lines 51-55).
- Regarding claim 28, the interface (Figure 2, element 204) is a graphical user interface (i.e. store and retrieve images; column 9, lines 18-20).
- Regarding claim 29, the controller (Figure 2, element 208) comprises: a vertical (i.e. Y coordinate) scalar to vertically scale the image and a horizontal (i.e. X coordinate) scalar to horizontally scale the image (column 13, lines 38-56).

- Regarding claim 30, the controller sets scalar registers (i.e. scaling factor; column 19, lines 47-48).
- Regarding claim 31, the vertical and horizontal scalars ($R_x(y)$ and $R_x(Y)$) operate responsive to the scalar registers (column 19, line 47 through column 20, line 51).
- Regarding claim 32, the plurality of corners is two (column 18, lines 38-40).
- Regarding claim 33, the plurality of corners is four (column 18, lines 9-15).
- Regarding claim 34, the controller (Figure 2, element 208) generates a distorted image before projecting the distorted image on the surface (column 9, lines 50-55).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Biles (US Patent Number 5,355,188) discloses a method and apparatus for distortion correction in optical projectors.

Rodríguez, Jr. et al. (US Patent Number 6,520,646 B2) teaches an integrated front projection system with distortion correction and associated method.

Raskar (US Patent Number 6,520,647 B2) shows an automatic keystone correction for projectors with arbitrary orientation.

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Song et al. (US Patent Number 6,836,298 B2) discloses an apparatus and method for correcting distortion of image and image displayer using the same.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Magda Cruz whose telephone number is (571) 272-2114. The examiner can normally be reached on Monday through Thursday 8:00-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Magda Cruz
Patent Examiner
April 21, 2005

RODNEY FULLER
PRIMARY EXAMINER

